*Journal of Research on the Lepidoptera* 9(4):223-226, 1970(1971)

*1160 W. Orange Grove Ave., Arcadia, California, U.S.A.*
*© Copyright 1971*

# ON THE OCCURRENCE OF *LIMENITIS ARCHIPPUS* X *L. LORQUINI* HYBRIDS (NYMPHALIDAE)

EDWIN M. PERKINS, JR.[1]

and

EDWARD V. GAGE[2]

In July, 1965, an unusual example of *Limenitis ssp.* was captured by E. V. Gage along the Amon wasteway, approximately 2 mi. S. of the Richland Y (confluence of Columbia and Snake Rivers), in Benton County, Washington (figs. 1, 2). Not until four years later, with J. C. Montgomery's discovery of 3 additional males—again taken along the Amon wasteway—did the identity of the presumably aberrant, original specimen become more focused.

A search through the literature revealed that these 4 *Limenitis* examples closely resembled the eastern *L. arthemis* (Drury) x *L. archippus* (Cramer) hybrids that were described and designated *arthechippus* by Scudder (1889), and later illustrated by Field (1914). More recently, a comparable hybrid from New York has been recorded and figured by Shapiro and Biggs (1970).

Given that 1) records of *L. weidemeyerii latifascia* (Perkins and Perkins, 1967) exist neither from the state of Washington nor from that region of Oregon contiguous to same; 2) *L. lorquini burrisonii* form norm. *maynardi* (Field), 1936 (figs. 1, 2) and its infrequently occurring, red-spotted form (*L. l. burrisonii* Maynard, 1891) do reside commonly in this area (Perkins and Perkins, 1966); and 3) the somewhat local, less frequently encountered Great Basin race of *L. archippus* (figs. 1, 2)—described and designated *lahotani* (Herlan, 1971)—is sympatric with *L. lorquini* in this same region, it is probable that the 4

---

[1] *Department of Biological Sciences, Allan Hancock Foundation, Room 103, University of Southern California, University Park, Los Angeles, Ca. 90007*

[2] *Route 1, P. O. Box 10, Richland, Washington 99352*

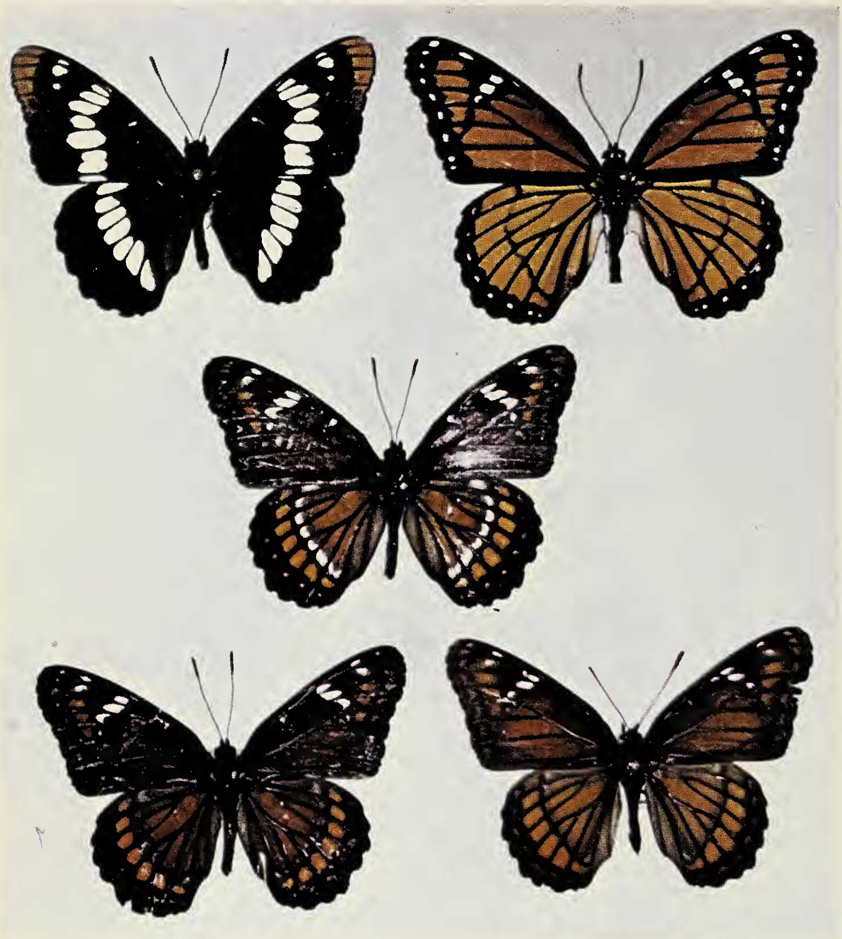

Fig. 1.—*Limenitis* from vic. Richland, Benton Co., Washington. Upper surfaces. Top left: *L. lorquini burrisonii* form norm. *maynardi* ♂, 31.V.70 (EVG). Top right: *L. archippus lahotani* ♂, 9.VII.70 (EVG). Center: *L. archippus* x *lorquini* ♂, 6.VII.69 (JCM). Lower left: *L. archippus* x *lorquini* ♂, 4.VII.65 (EVG). Lower right: *L. archippus* x *lorquini* ♂, 6.VII.69 (JCM).

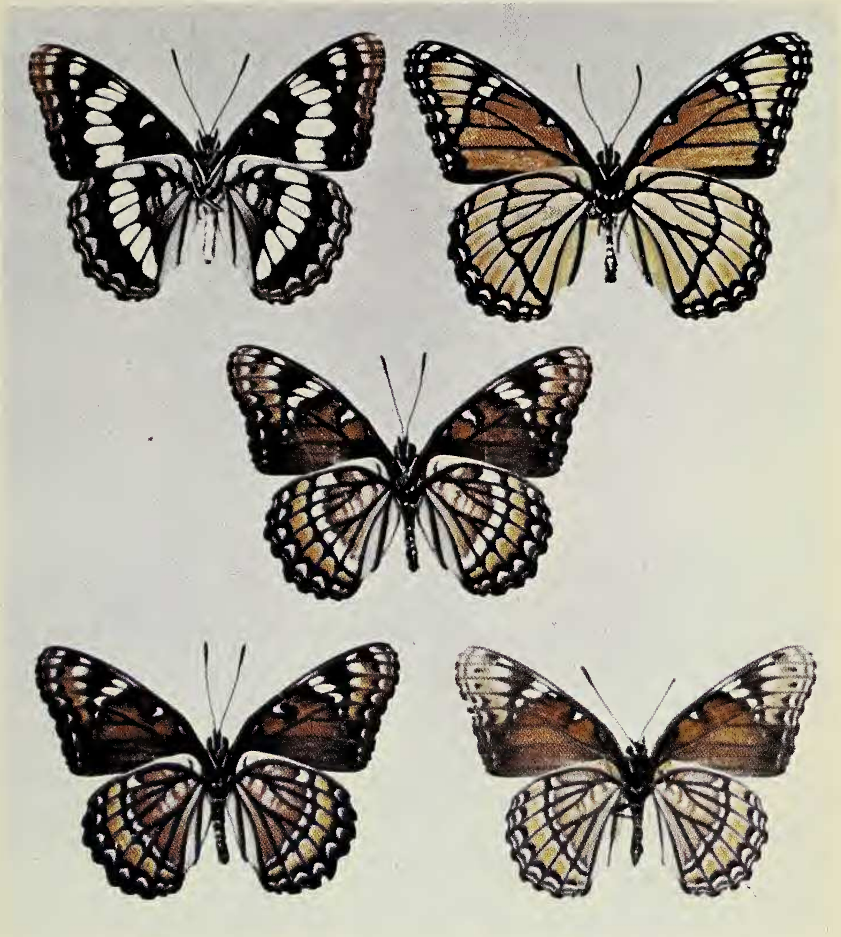

Fig. 2.—Lower surfaces of the specimens illustrated in Fig. 1.

hybrid males represent the $F_1$ of an *archippus-lorquini* cross.

Although somewhat variable, it is interesting that each of the western *archippus* x *lorquini* hybrids closely resembles the eastern *archippus* x *arthemis* (=*arthechippus*) hybrid depicted by Shapiro and Biggs. Comparison should be made between the specimens illustrated in this text with those presented by Shapiro and Biggs (1968).

The phenotypic variability of the 4 western, $F_1$ hybrids suggests considerable elasticity in the $P_1$ genome; i.e., the variation in markings and ground color manifested by the *archippus* x *lorquini* examples suggests the incompleteness of parental homozygosity for different alleles. As Hovanitz (1949) pointed out: "It seems likely that enough interbreeding occurs between different [*Limenitis*] species so that none of them is able to reach a state of complete homozygosis for the genes by which they differ. Thus hybrids are never all alike."

## LITERATURE CITED

FIELD, W. L., 1914. Hybrid butterflies of the genus *Basilarchia. Psyche,* 21: 115-117.

GAGE, E. V., 1970. A record of a naturally occuring *Limenitis* hybrid (Nymphalidae). *Jour. Lepid. Soc.,* 24(4): 270.

HERLAN, P. J., 1971. A new subspecies of *Limenitis achippus* (Nymphalidae). *Jour. Res. Lepid., in press.*

HOVANITZ, W., 1949. Increased variability in populations following natural hybridization. In: *Genetics, Paleontology, and Evolution.* (Ed. by Jepsen, G. L., E. Mayr, and G. G. Simpson). Princeton Univ. Press, pp. 339-355.

PERKINS, E. M., and S. F. PERKINS, 1966. A review of the *Limenitis lorguini* complex (Nymphalidae). *Jour. Lepid. Soc.,* 20(3): 172-176.

PERKINS, S. F., and E. M. PERKINS, 1967. Revision of the *Limenitis weidemeyerii* complex, with description of a new subspecies (Nymphalidae). *Jour. Lepid. Soc.,* 21(4): 213-234.

SCUDDER, S. H., 1889. *Butterflies of the Eastern United States and Canada.* Vol. 1, p. 296. Author, Cambridge, Mass.

SHAPIRO, A. M., and J. D. BIGGS, 1968. A hybrid *Limenitis* from New York. *Jour. Res. Lepid.,* 7(3): 149-152.